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THE MODERN OPERATION FOR CATARACT.

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By HASKET DERBY, M.D., Lecturer on Ophthalmology, at the Medical School of Harvard University, and Surgeon to the Massachusetts Charitable Eye and Ear Infirmary.

WE detailed with some minuteness, at the last lecture, the method of flap extraction, and showed its superiority over all others that had gone before, for the removal of senile cataract. Its general introduction was, indeed, a great advance for the ophthalmic surgery of the day. The percentage of entire failure was reduced more than one half. Where two or three lost the eye after a needle operation, only one was thus unfortunate after an extraction. In round numbers nine people out of ten thus treated regained useful vision.

Improvement, however, was not to end here. Statistics showed that, in spite of the utmost skill, a certain number of flap extractions failed, ten people in a hundred not recovering sight. Clinical examinations of eyes recently operated on disclosed the fact that want of success was principally due to imperfect healing of the cornea, and inflammation of the iris. Moreover, the after-treatment was tedious and protracted, requiring the greatest watchfulness on the part of the surgeon and nurse, the greatest care and endurance on that of the patient. And thus the leaders of the science were led to cast about them for some other operation that might combine greater safety with an easier convalescence.

Three new methods of operating for cataract, therefore, appeared early in the past decade. The first was put forward by Dr. Mooren, in 1862, and consisted in the performance of an iridectomy, that is in the removal of a segment of the iris corresponding to the apex of the flap, two weeks before the extraction. This was submitted to an extensive trial, and with marked success. It rendered the operation unquestionably safer. For, you will remember from the last lecture, the dangers of flap extraction lie in—1st, diffuse suppuration of the cornea; 2d, defined suppuration of the same; 3d, iritis. Against the first, iridectomy is powerless. But it modifies the course of the second, and protects in great measure against the third; affording thus, in the aggregate, an important diminution of danger. The great objection to it is that it subjects the patient to the anxiety and shock of two operations, instead of one.

To avoid this, Prof. Jacobson, of Königsberg, proposed, in 1863, the following plan of extraction, and introduced the very important principle, that a cut made in the sclero-corneal junction heals more readily than one carried out in the cornea itself. You are aware that the cornea is set into the sclerotic, not at the very edge of the anterior chamber, but a little within it, just as a watch crystal does not at its edge come square against the edge of the face, but is set into a gold rim that overlies it, rendering it, therefore, possible to pierce the sclera with a knife or needle this side of the rim of the cornea, and yet emerge in the anterior chamber. The part corresponding to the metal edge holding the crystal of the watch is called the sclero-corneal junction. It was in this region that Jacobson made his flap. Having narcotized his patient, he made a lower section, just below the horizontal meridian of the cornea, the line of which in no place invaded its substance. Having removed the lens in the usual manner, a broad iridectomy was made downwards, the object being to remove that portion of the iris most likely to have been bruised by the cataract in its exit, and most liable, therefore, to cause inflammation of the entire structure. The results of this operation, in the hands of its originator, were found wonderfully superior to those of ordinary flap-extraction, while the objections to it were the unfavorable effect on vision of a downward iridectomy, and the difficulties and dangers in the way of excising a piece of the iris after the removal of the lens.

Previous to the bringing forward of either

of these methods, Schuft (now Waldau) of Berlin, had invented, and, in 1860, published an account of certain instruments for facilitating the linear extraction of cataract, a series of spoons, one of which, introduced through the incision and passed behind the lens, was to hold the nucleus, pressed forwards against the cornea, between its edges, and withdraw it by simple traction.

These instruments, however, turned out to be too large and clumsy for the purpose desired, their introduction doing appreciable violence to the eye. But, in 1865, Critchett and Bowman, the distinguished surgeons of Moorfields Hospital, London, devised scoops or spoons, far better than and preferable to those of Schuft; and, through the articles written and the cases treated by them, scoop extraction, or outspooning, was raised to the dignity of a separate method. For some time it held its place as the favorite operation at Moorfields, and proved remarkably successful.

In doing the scoop operation, an incision is made upwards, with a broad lance knife, specially made for the purpose, at the sclero-corneal junction, from 4‴ to 4½‴ in length. A large piece of iris is removed. The capsule is next opened very freely. The scoop must then be introduced, so as to glide readily behind the posterior surface of the cataract, which, being grasped by the scoop, is to be slowly removed. This latter manœuvre requires great delicacy of manipulation. Especial care must be taken not to dislocate the lens in introducing the scoop, and not to press it so far forward as to injure the iris or cornea during its extraction.

"Thus," says Critchett, in his description of his method, "there suddenly appeared three new methods of operating for cataract, bearing the name of their several champions—Mooren, Jacobson and Schuft; but justice compels me to state that these gentlemen lighted their tapers at the torch of their great master, Prof. von Graefe. Each of these methods had been previously suggested and practised by him, but only in exceptional cases instead of as a general rule."

You will observe that each of these methods differs from flap extraction in one very important respect, namely the removal of a portion of the iris, which in ordinary extraction is left untouched. It is against this "mutilation," as it is termed, that so much outcry has been raised by the opponents of the school of Graefe. And we readily agree with them that a whole iris is better than a part of one, and that an eye on which no iridectomy has been done is a handsomer eye to look at and a slightly better eye to see with than one on which this operation has been performed. On the other hand, we assert that where the iridectomy is done upwards, and the aperture left thus covered by the upper lid, the unsightliness disappears, and the optical disadvantage is so slight as to be practically not worth regarding. Furthermore, we positively claim that the removal of a portion of the iris leaves an easier passage for the lens, guards against present inflammation, modifies what may occur later, and gives the eye a better chance of recovery. Statistics prove beyond a peradventure that an eye is less likely to be lost after an extraction accompanied by iridectomy, than after one where it has been omitted; and that there are now more cases of cure than before the introduction of this modification.

An operation that should avoid the dangers of previous methods, while combining their advantages, was yet to be discovered; and it fell to the lot of Prof. von Graefe to render this distinguished service to science.

In 1865, the same year in which the articles of Critchett and Bowman on scoop-extraction appeared, he read to the Heidelberg Society, at its annual meeting in September, an account of a new procedure. He spoke of the advantages of the English method of scoop-extraction, and gave a detailed account of the 118 cases in which he himself had performed it, and the results he had attained; and then added that he had entirely abandoned this operation, in spite of the favorable opinion he had at one time formed of it. Reviewing his former studies on the subject of the linear cut, he had hit upon a method which allowed the cut to be executed in a better manner, and gave increased facilities for the removal of the lens. He modestly added, that, having as yet performed it only 69 times, he would only call the attention of those present to it, and ask them to give it their consideration, not presuming as yet to maintain its superiority over other methods, or in all cases.

These 69 operations were performed by Graefe during the last ten days of May and the months of June and July. The heat of the season was unusually intense and long-continued, and all except 8 of these patients were in the public wards of the hospital. Had the proportion of private patients been larger, the results would undoubtedly have been more brilliant. As it was, there were 62 entire and seven partial successes, not a single eye being entirely lost.

A year later, he reported 300 cases of the operation, many of them being of a kind in which flap extraction would have had

either to be preceded by a preparatory operation, or would have been refused altogether. Unripe cataracts, commencing cataracts, simple central opacities of the posterior polar region, lamellar cataracts, cases of granular lids, disease of the lachrymal passage, and even chronic iritis were among them. One man was operated on who was liable to cramp of the facial nerve, so aggravated by touching the eyelid that no preliminary examination of the cataract could be made. One of his eyes was lost, the other saved. Another patient had senile atrophy of the brain, causing raging delirium the day after the operation, and yet regained both eyes. In short, complete success was attained in 94 per cent. of all the cases, completely outstripping the results of flap extraction, and, in view of the unfavorable circumstances that have been detailed, remarkable in the extreme.

In view of all this, as well as of the relatively short duration of the after treatment, and the comparative freedom enjoyed by the patient during its continuance, Graefe now proposed that his method should no longer be a supplement to, but rather a substitute for flap extraction; in other words, that it should become *the* operation for senile cataract.

Prof. Knapp, formerly of Heidelberg, but now of New York, published, in 1867, a statement of one hundred cases operated on by the new method. Of these cases—

2 resulted in loss of vision;
in 13 partial, and
in 85 entire success.

In 1868 he brought out another hundred:—

2 eyes were lost;
in 5 there was partial, and
in 93 entire success.

And in 1869, out of a third hundred—

3 eyes were lost;
6 operations partially succeeded;
91 operations entirely succeeded.

The percentage of total loss being thus shown to be decidedly less than had been found, even by the most expert operators, to be the case with flap extraction.

One of the great objections to this new operation was the loss of vitreous which at first so frequently occurred, and which, as will be seen when we presently describe the method in detail, would seem very likely to take place. After his first labors on this subject had been published, Graefe so much improved his former manner of doing the operation that, in 1867, out of 230 cataracts extracted in this manner, he only had an escape of vitreous 9 times.

He christened his method "modified linear extraction" at this time, but exchanged later the word "modified" for "peripheric." The same year (1867), he concluded an article on the operation in the following words:—"As to the general value of this method of operating, the opinion of competent experts has been almost unanimously expressed. It is no slight thing for a procedure, not only new in itself but requiring careful and unaccustomed study, to hold its own against one already in the field, and in which the leading oculists are either completely versed or have acquired an exceptional skill. The most confident anticipations must be exceeded when, after a short interval, the latter is weighed in the balance with the former and found wanting. The kindly communications furnished me by my colleagues, the minutes of the ophthalmic congress recently held in Paris, and the voice of public opinion, show this to be really the case, and that hardly one, who has once taken up the linear knife, has been found to return to the constant practice of flap extraction." He here gives the names of men like Arlt, Donders, Bowman and Critchett, who have followed successively so many different methods of operating, and have found this to best stand the test of comparison, and then adds:—"As every new thing in science has been objected to, so it has occurred that a few voices have been raised against modified linear extraction in its present form. It happens fortunately, however, that, in the present instance, the objections are raised by parties who have no personal experience to go upon, and whom we must therefore beg leave to consider as without the pale of this discussion."

We pass at once to a description of the operation. The instruments required are a speculum, fixation forceps, narrow knife, iris forceps, iris scissors, capsule opener (right and left), and caoutchouc spoon. Sponges, soaking in ice-water, should also be at hand.

The patient may either be in bed or sitting up, the eye to be operated on being nearest the window. As the cut is always made upwards, the operator sits or stands behind the patient for the right eye, and in front of him for the left. But, if fortunate enough to be able to make the cut with either hand, he sits or stands in each case behind him.

Ether has to be used in the great majori-

ty of cases, as without it most Americans profess themselves unwilling to submit to a surgical operation. If, however, a patient be calm, collected and courageous, it is much better he should endure the comparatively slight pain without an anæsthetic. For after the preliminary steps have been taken, and we come to the making the cataract emerge from the eye—a thing it is desirable to effect without introducing any instrument—we lose the natural muscular tension which is so valuable an auxiliary, and which gives way, under ether, to complete relaxation. Again, when cortical masses are left behind after the nucleus has come out, it is desirable to get the patient to look down in order to remove them, and to do this he must have his senses about him. In short, while ether and chloroform are in many cases indispensable, they decidedly embarrass a portion of the operation, and are not to be used in those cases where we have entire confidence in the fortitude and endurance of the patient. Their number is unfortunately limited.

The speculum for separating the lids, now shown (Fig. 1),* differs from those previously in use in being more bent, towards the point of union of its branches, so as to lie more closely against the temple, and thus be more out of the way. It has, moreover, projecting plates, which give the fingers a better purchase in applying and removing it, and is made right and left. Fig. 2 shows the line of its curvature.

The fixation forceps are to be applied below the cornea, and from 1‴ to $1\frac{1}{2}$‴ towards its nasal side.

The knife (Fig. 3) with which this operation is performed, is peculiar to it. It is, as you see, long and narrow. Originally, a broader one was proposed, but this form has been found to offer, on the whole, the most advantages.

The point of the knife is made to enter the anterior chamber at a point, on the temporal side, corresponding to A, and is not directed in the beginning toward the point of emergence at B, but, in order to make the inner wound all the larger, we push forward toward the point C until the blade has penetrated some 3‴ or 4‴ into the chamber. The handle is then lowered and the knife advanced under the edge of the sclera to B, where the counter-puncture is made. When the point has once passed through the sclera, the edge of the knife, which has up to this time been carried in a plane parallel to the iris, must be inclined obliquely forwards, and the cut completed by pushing forward the blade as far as it will go, and then withdrawing it, cutting all the while. Once freed from the sclera, the knife encounters the conjunctiva, which it carries before it, and which must be divided so as to leave a flap, never more than $1\frac{1}{2}$‴ in length, and by preference even less, which may serve as a covering.

The point A is to be $\frac{1}{2}$‴ from the edge of the cornea, and $\frac{2}{3}$‴ under an ideal tangent to the cornea at its apex. The point B precisely corresponds. After the counter-puncture the aqueous humor escapes under the conjunctiva, raising it up like a blister. No attention is to be paid to this, but the cut quietly completed according to the directions already given.

If they be closely followed, a wound is obtained from $4\frac{1}{2}$‴ to $4\frac{3}{4}$‴ in length. For very hard and thick cataracts it should measure 5‴. Let us pause for a moment, in our description of the operation, to consider its geographical position. It was at first thought that it lay in the sclera, and the greater ease with which this tissue was supposed to heal, as compared with the corneal, was pointed out as one of the chief advantages of the new method. On the other hand, the situation of the cicatrix in the sclera was objected to, as likely to cause separation of the retina through its subsequent contraction. Both advantage and objection are based on erroneous premises. Dissection shows that, while the external wound is in the scleral substance, the main body of the cut (wound canal) is three quarters in the corneal tissue, and the inner edge is entirely corneal. The cut is therefore to be regarded as, in the main, a corneal one; and its advantage over the cut made in flap extraction is that, besides being linear, it is made in the *periphery* of the cornea and not in the corneal *substance*.

After the knife has been laid aside, any clots of blood that may have formed are to be removed with fine forceps from between the lips of the wound. We are then ready to take the second step, to proceed to the excision of the iris, which should be always undertaken by the operator himself.

For this purpose he entrusts the fixation forceps to an assistant, and with the iris forceps gently raises the conjunctival flap, lays it back over and smooths it down upon the corneal surface. The prolapsed iris is now generally exposed, and it is of the greatest importance that no portion should be left behind to heal in the wound, especially at its corners, interfere with its

* The speculum shown is intended for the right eye.

union, excite suppuration, and act as a source of permanent irritation. It is to be seized not in its middle, but about 1‴ from the temporal corner of the wound, and excised with three or four successive clips of the scissors, care being taken to alter, with each cut, the direction of the blades, making them, as it were, every time tangential to the wound at that particular place. The ordinary curved scissors cannot here be used to advantage, and it is more desirable to employ those that are either straight or bent like a knee at the pivot, the latter being used for the left eye when the operator sits in front. By gently drawing the iris, after each clip, towards the nasal side with the forceps, a sufficient tension is all the time kept up without its being necessary to let it go and seize it afresh. So complete must be the unity of action between the hand that grasps the forceps and that which holds the scissors, that the absolute necessity of having them both belong to the same person becomes clearly manifest.

The fixation forceps are now to be again taken by the operator.

You are aware that the iris is made up of two sets of fibres, sphincter and radiating, the former contracting and the other dilating the pupil. As has been stated, it is of extreme importance to prevent any portion from healing in the wound made for the exit of the cataract, and it is at this stage of the operation that efforts in this direction are most availing. Sometimes the edges of the cut seem perfectly free; if, however, a portion of the sphincter is found to protrude at either extremity, or even to lie in close apposition, it will get so jammed in during the passage out of the lens as to render its reposition a matter of extreme difficulty. Now, if ever, is the time to replace it. And this is best effected by taking the hard rubber spoon, attached to the other end of the (Fig. 4) cystitome, wetting it, and rubbing with it the surface of the eye-ball, commencing a little on the scleral side of the corner we are working on, and making passes towards the centre of the cornea. The convex surface of the spoon should, of course, be used. It is thus often possible to smooth out the fold of iris lying in the wound, as also to excite contraction of the sphincter and thus retraction of its corner.

Although it is not always possible to prevent the incarceration of a portion of the iris in the wound, the frequency of its occurrence will, by following these directions, be very much diminished, and the success of the operation proportionately increased.

Bleeding into the anterior chamber may proceed either from the divided conjunctiva or the cut edges of the iris. It interferes seriously with the next step, the opening of the capsule. For, unless the operator clearly sees what he is about, he may dislocate the lens on the one hand, or make an insufficient cut in the capsule on the other. It is therefore desirable to clear the blood out of the way. Gentle pressure on the eye with a sponge will often check its flow, after which slight pressure on the scleral edge of the wound will give it a chance to run out. If, however, it still continues to be poured out, the best way of checking it is to apply to the eye a soft sponge dipped in ice-water, changing it from time to time as it loses its coldness.

When the surface of the cataract once more becomes visible, it is time to incise the anterior capsule. The cystitomes (Fig. 4) used for this operation are, as you see, so bent as to be adapted each to one eye only, and are to be introduced in the manner described in the operation of flap extraction. The capsule is to be freely opened in various directions, and well out to its edge. Slight pressure on the bulb with the fixation forceps, at this time, puts the capsule well on the stretch, and makes it possible for the tooth of the cystitome to penetrate it more effectually.

Should there be a capsular opacity, the forceps shown in the drawing (Fig. 5) are to be used for its removal. They are to be introduced obliquely, one branch in front of, the other through the capsule behind the opacity, then closed and the included fragment of capsule torn away.

All is now prepared for the removal of the cataract, which is to be made to escape from the eye in the following manner: The speculum, it will be remembered, is still in place, and with one hand the operator controls the position of the eye-ball by means of the fixation forceps, which have not been removed. They grasp the conjunctiva below the lower edge of the cornea, and from 1‴ to 1½‴ inward from it. The hard rubber spoon is now to be taken in the other hand, and its convex face applied directly against the lower edge of the cornea. It is then to be turned on its axis in such a way that the bowl of the spoon is turned half up, and the part of the back nearest its upper edge is brought gently to bear against the lower part of the cornea. The spoon thus held and exerting a steady pressure is made to glide along the lower edge of the cornea, giving an upward impulse the while, over the space of about ½‴. In consequence of this the wound opens

and the upper edge of the cataract advances to its margin. Pressure with the spoon is now made toward the centre of the eye, but as the cataract emerges, more and more directly upwards, until, chasing the cataract before it, it slides up over the corneal surface, itself the while almost a tangent to it.

This manœuvre must be seen, to be fully understood and appreciated. I have given the account of it as nearly as possible in Graefe's own words.

When the cataract has once presented itself at the edge of the wound it can be assisted in its passage out, and when more than half has come through the rest can be made to follow by directly laying hold of it with the spoon. It is, however, better to resist the temptation to remove it in this manner, and to follow it up, step by step, from the lower edge of the cornea till the last particle has emerged. The leaving behind of cortical substance may thus most satisfactorily be avoided.

It is of extreme importance, adds Graefe, to keep pressing perpendicularly against the cornea until the cataract is brought up and into the wound, and then, and not till then, to press upwards. If this direction be disregarded, cortical substance is very apt to become detached and left behind.

When, in spite of these precautions, cortical masses have remained behind, their removal must, if possible, be effected in the same manner. Should they resist this, the fixation forceps and speculum must be removed, and the patient left alone a short time, till the effects of the anæsthetic have in part passed away, and a slight amount of aqueous humor recollected. He must then be directed to look down, and gentle pressure and counter-pressure applied with the tips of the fingers, through the lids, as in the case of flap extraction, until the pupil appears black and clear.

We now come to the very important subject of after-treatment. We fortunately possess a short article of Graefe's on this point, written a few months before his death, and embodying all the results and deductions of his ripened experience. It is in substance as follows. And it may be well here to observe that Graefe's inducement to prepare it was, in large part, the fact that his own cases of cataract thus treated did so much better than those of other leading operators.

The edges of the wound being well in contact, and all coagula removed from their vicinity, the eye is to be gently closed, no atropine being now used. The bandage is to be applied in the manner described in the last lecture, a circular piece of soft linen being first laid upon the eye, little tufts of charpie then evenly distributed so as to fill the orbital cavity, and the flannel roller finally passed thrice around the head and thrice over the eye, each ascending fold overlapping its predecessor and being carefully adapted to the equable support of the entire surface of the bulb. The charpie must be selected and of uniform fineness. It must be so applied that the hand, passed over its surface, fails entirely to appreciate the prominence of the bulb, and that slight pressure upon it causes no sensation of pain. For the object of the bandage is, as you are well aware, to hold the edges of the wound in exact contact, and to maintain the conjunctival flap in close apposition with the surface of the sclera. If, now, we follow the example of many careless surgeons, and take only a single turn of the roller over the eye, which chances to exert more pressure on the lower half of the bulb and on the middle of the cornea than on the wound, we shall get just the reverse of what we desire to effect—the wound will gape and the conjunctival flap be raised. The other eye is to be closed with isinglass plaster.

Another capital mistake is leaving the bandage undisturbed for several days, when no pain is complained of. It should be removed the evening of the operation, and again on the succeeding morning. After this it may be changed once in twenty-four hours. When the first change is made, traces of blood, tears, conjunctival secretion, possibly remains of cortical substance, will be found on the patch of linen next the eye; and it is readily conceivable that such a mixture, if left undisturbed, might decompose and become a source of infection to the eye itself. Graefe advises, on first removing the bandage, that the upper lid be gently raised and a hasty glance taken at the lower part of the cornea, by the aid of a single candle. He does not yet recommend the exposure of the wound.

Graefe protests against a certain apathy with regard to the after-treatment of cases that do not seem to be doing well, which he has even seen evinced by some of the leaders of the profession. He believes in meeting the earliest indications with an energetic plan of treatment; and advises that particular attention be given to the least indication of pain, in the region of the wound, that does not appear to be a necessary concomitant of its union. Sometimes, no pain follows the operation. It should never be so severe as to keep the patient

restless or prevent his sleeping, nor should it take on a rending, burning, or darting character. If it does, a subcutaneous injection of morphia is to be made on the temple. Should the pain, in spite of this, continue, the bandage is to be removed, and the lids bathed for a few minutes with a soft sponge dipped in cold water.

The pain in the wound should begin to decrease after the third hour. Should it not do so, the same rules are to be observed.

After the sixth hour there should be no continuous sensation in the eye that has been operated on. A slight pang, when the patient attempts to move his eye under the bandage, need not of course be regarded. If, however, there be a continuous sensation, the bandage should be changed; if this prove insufficient, a morphine injection is to be made. There are a good many people who, realizing the importance of an operation for cataract, expect as a natural consequence a certain amount of pain, and nerve themselves for its endurance. This idea should be summarily dispelled, and warning be given that any enduring sensation in the operated eye, whether it involve much or little pain, is an evidence that something is wrong, and its existence is at once to be made known. A second injection of morphine may be made if necessary, or, if the patient is full-blooded and his circulation excited, four to five ounces of blood may be taken from the arm.

Too much stress cannot be laid on the importance of a good night's sleep following the operation. It is well to give the patient a dose of castor oil the day before, the effect of subsequent narcotics being thereby rendered more uniform as well as sure. The evening of the operation chloral may be administered, care being taken that a German preparation, by preference Liebreich's, be used. The best vehicle for its administration is the syrup of allspice, syrupus pimentæ. Graefe was in the habit of giving from seventy-two to ninety-six grains at a dose in ordinary cases; while with people of intemperate habits he found at least two drachms necessary. Should the first dose prove ineffectual, he would give to the former class twenty-four, to the latter forty-eight grains more, four hours later. If injections of morphine had already been made to relieve local pain (from one-sixth to one-fifth of a grain in amount), with good effect except as far as inducing sleep was concerned, he would give ordinary patients forty-eight grains, drinkers from seventy-two to ninety-six grains of chloral in addition.

As a general rule, the reaction in the wound takes place between the twelfth and the twenty-fourth hour succeeding the operation, in the majority of cases between the fourteenth and eighteenth. If all is going on well, not the least pain should be experienced. But if, towards the end of the first night, or towards morning, any decided sensations are felt, they are to be carefully noted, inasmuch as this is the most critical moment. Though the hour for changing the bandage has not arrived, it should at once be removed, and the condition of the eye investigated. The wound itself need not be examined unless there is an increased secretion of tears, swelling of the lids, chemosis, or diminished lustre of the cornea. It will be sufficient to gently wash the lids, renew the bandage, and, in extreme cases, to inject a little morphine. If, after this, the pain persists, at least four ounces of blood are to be taken from the arm. If the lower layers of charpie are wet, if the upper lid is swollen, and if the fold of linen in immediate contact with the eye is covered with much secretion, suppuration of the wound is imminent, and active measures must be resorted to. The lids are to be carefully washed, and their cutaneous surface then brushed over with *lapis mitigatus* (a crayon of one part nitrate of silver and two parts saltpetre), washed immediately afterwards, first with salt and water, then with cold water, and thoroughly dried. The bandage is to be replaced in the *constrictive* form, which has already been referred to, four turns being taken over the eye, the second and third of which are drawn particularly tight. If the patient is tolerably plethoric, six ounces of blood are to be taken from the arm, and half an hour later an injection of morphine is to be made on the temple. Soon after the bleeding, a cathartic powder of calomel and rhubarb is to be administered; if in ten hours no dejection occurs, a dose of castor-oil should be given. When the patient is not particularly strong the venesection may be omitted, and only a small dose of calomel given.

Such energetic measures as the foregoing have been severely criticized, and will in all probability be for some time condemned by a portion of the profession, who see in them a return to the errors of a past generation. Innovations on the established order of things are always sure of meeting with a resistance which thinks more of being energetic than reasonable, the adherents of which are largely drawn from the class of routine practitioners. Ask anyone you hear objecting to and criticizing this treat-

ment, whether he has ever tried it himself. And hear the words of a clear-headed, conscientious and sincere observer. "When these measures are taken in season, we often see, at the next change of the bandage (which, under such circumstances, should not be delayed more than six hours), an entire retrogression of the unfavorable symptoms, and the case resuming its normal course."

Suppuration of the wound is ordinarily ushered in by pain, but with some patients no such warning is given. This illustrates the importance of renewing the bandage at the time of the period of reaction, even if all seems to be going on right, as we may otherwise find that the favorable period for treatment has passed away. In such cases, Graefe lays special stress on the thorough cauterization of the cutaneous surface of the lids, on the constrictive bandage and the cathartic powders. The morphine injection is to be omitted, if pain is wanting, while venesection is only to be resorted to when the patient is strong and has a full pulse. Bloodletting is, indeed, only to be advised during the short initial period, it being of no value when the suppurative process is fairly under way. As regards leeches, in cases of threatening suppuration, their application to the temple does positive harm. If placed behind the ear they are less dangerous, but annoy the patient considerably. The most potent remedies during this period of reaction are the cauterizations and the constrictive bandage, which are to be renewed every six hours. In the case of patients where health is much reduced, quinine should be given in addition, its administration being preceded by a cathartic.

Anomalous symptoms during the subsequent treatment are apt to be dependent on partial suppuration of the wound, with its usual accompaniments. If gastric irritation be present, an emetic should be given on the second day, and the compressive bandage and cauterizations of the lid continued. Warm fomentations are to be used between the applications of the bandage, but are not to be left on for more than from quarter to half an hour at a time, and are entirely to be desisted from if their employment be attended by swelling. Graefe mentions that he was formerly in the habit of using these warm aromatic fomentations more freely, and still considered them of the utmost value in cases of transplanted iritis and the like.

The food administered should vary in accordance with the strength and habits of the patient. His bill of fare should, on no pretext, include articles that are entirely novel or absolutely repugnant to him.

The after-treatment should be largely based on the habits and circumstances of the individual, the principles that have been enunciated being those that are generally applicable. Neglect in following them lies at the door of many a failure.

I have given you an almost literal summary of Graefe's views as regards the treatment after the operation for cataract, and will conclude in his exact words. "I have simply insisted on the principles," he says, "which in general seem to me to best ensure the success of the operation, and a neglect in following which may be made to explain many a disastrous case. Anxious vigilance need only be exerted for a few days. The fact that a human being's whole happiness depends on the result serves to whet our energies. And, after all, how infinitely shorter is the period of anxiety and care, than was the case with the old method! If twenty-four hours have passed away without any premonitory symptoms of suppuration of the wound having shown themselves, and if constant care be exercised, there is nothing more to fear. After three or four more days have elapsed without any untoward occurrence, we have merely to exert ordinary care and instil atropine, the application of which is not to be advised before the third day, unless cortical masses have been allowed to remain. If the conjunctiva stands it, and the patient has not an eye constantly kept on him, I keep the bandage on up to the end of the first week, for fear of injury. And the process of leaving it off must, instead of a sudden, be a very gradual one, the application being at first discontinued for only a few hours at a time. Even in the winter season, the most of my patients are discharged before the end of the second week."

This concludes, gentlemen, the description of the modern operation for cataract. We have traced the various ways devised for the removal of this disease, have examined into the principle on which they are based, and have witnessed the manner of their performance. Finally, we have applied to each the touchstone of relative success, and have seen why one has followed the other, and why method has succeeded method, in the earnest attempt to eliminate the various causes of failure. The end is not yet, but it is to be hoped that all will agree that, up to the present time, no operation has taken the field that gives a patient, blind with cataract, the same chance

of recovering his sight as the one we have to-day studied.

[An analysis of sixty-one cases of cataract, operated on by the method of Graefe, will appear in a future number of the JOURNAL. H. D.]

OBSTETRICS IN VIENNA.

(Concluded from page 349.)

BY these tables it will be seen that, in the years 1861 and 1862, the death-rate was materially increased. This was due to an epidemic of puerperal fever, which broke out in the hospital, and as its history may prove interesting, on account of its being the last one that has visited the institution, I have translated the subjoined sketch.

"In the first half of the year 1861, the rate of mortality was moderate. In the summer of the same year, a few wandering cases of erysipelas occurred. In October, however, a large number of patients were attacked with puerperal fever, and from this time, until the abatement of the epidemic, the mortality was very great.

"At the time the disease first made its appearance, there was no over-filling of the wards; cleanliness was particularly cared for in every respect; the drainage was good, and the ventilation, by means of open windows, was well regulated. The patients attacked were immediately transferred to the sick wards, which are quite remote from those of the other subdivisions; the mattresses were thoroughly cleaned and aired daily; every ten days the wards were completely emptied, and during twenty-four hours allowed to air; the strictest rule was observed in regard to the practice of but twelve praktikanters in the wards, and the regular midwives were not permitted to touch the sick.

"In spite of all this care, one-fifth of the pregnant women admitted into the first clinic during the last week of October, 1861, were attacked with puerperal fever.

"Of the 346 patients delivered in this clinic during the above month, 50 were taken sick with the disease, of which number 25 died—22 in the last week alone.

"The mortality became so great in November, that the students were forbidden to make any vaginal examination; no operative course was given; practical instruction was suspended; none but the regular corps of midwives attached to the wards were employed; the puerperal patients, as soon as attacked, were transferred to the general wards of the hospital; powerful disinfectants were used to purify the air of all the rooms, and the midwives and accoucheurs compelled to wash their hands, both before and after an examination, in a solution of hypermanganate of potash.

"Notwithstanding all these precautions, the mortality in the first clinic during the month of November was eight per cent. of all those delivered, or ten per cent. if we reckon those who died after their transfer to the general wards on being attacked with the fever. This percentage was four times as large as in the four years first preceding, when only soap was employed to wash the hands, and the practical instruction carried on uninterruptedly.

"In the second clinic, of the 278 women who were delivered, nineteen per cent. died, or fourteen per cent. in the clinic itself, and five per cent. in the general wards, after their transfer. During this period, the attending physicians made no *post-mortem* examinations, nor once visited the dissecting-room.

"In December, 1861, a few praktikanters only were permitted to come into the wards; examinations of the patients were very sparingly made, and the potash solution most conscientiously used for washing the hands.

"During this month, seven per cent. of the patients in the first clinic died, and six per cent. of those transferred from it to the general wards—or a total of thirteen per cent.

"In January, 1862, the mortality in both clinics remained quite large, but after this month, the death-rate began gradually to decrease."

In reviewing the history of this epidemic, Prof. Braun arrives at the following conclusions:—

"Practical instruction, during the month of November, at least, could not have contributed to the unfavorable condition of the wards, since, during this period, no student was allowed to make any examination.

"Chemical disinfectants afforded no certain protection against the spread of the disease, the mortality remaining very large during the months in which they were so faithfully employed.

"The wards, designed for the instruction of the students, were not more heavily visited than those in which none but the women practised.

"No cause whatsoever could be assigned for the great prevalence of the disease, though many facts go to prove that influ-

ences at work outside of the lying-in hospital were also effective within its walls in producing this epidemic.

"Of those patients in the first clinic, who died of puerperal fever, during the month of November, thirty-eight per cent. were attacked during pregnancy, and forty-one per cent. were delivered prematurely, nearly all having been but one day in the hospital before their confinement.

"Of the 130 fatal cases, occurring during the months of October, November and December, 1861, after the patients attacked had been removed from the first clinic to the general wards of the hospital, sixty-five per cent. had remained but one day before delivery in the lying-in wards; eight per cent. one week, and thirteen per cent. from two to six weeks. A longer stay in the obstetrical department seemed not to be detrimental.

"Febris ante Partum occurred, in the above mentioned months, in four per cent. of those delivered, in twenty-three per cent. of those attacked with puerperal fever, and in more than twenty-per cent. of those who died. So that in one in every five of those who died, and one in every four of those who contracted puerperal fever, fever set in before their delivery."

The great cause of the present healthy condition of the wards is due to the excellent system of ventilation which was introduced into the hospital during the summer of 1863. Of its efficiency, the following statistics will convey an adequate idea:

From the beginning of the year 1830 to the end of 1849, 59,088 women were delivered in the wards of the first clinic, of which number 4583 died, or 7.75 per cent.

From the commencement of 1850 up to October, 1863, 57,345 women were delivered in the same clinic, of which number 1961, or 3.46 died.

From October, 1863, at which time the present system of ventilation went into operation, until January, 1868—a period of four and a quarter years—there were delivered in the first clinic 20,554 patients. Of these, 205 or 0.99 per cent. died of puerperal fever, and 70 or 0.34 per cent. from other causes—a total of 1.33 per cent.

So that since the wards have been thoroughly ventilated, there has been a mortality in them of 64 out of every one thousand less than in the period from 1830 to 1850, and 21 out of every thousand less than in the period from 1850 to October, 1863, and this too notwithstanding that the number of students practising has if anything increased.

In general, the highest rate of mortality in the obstetrical wards, has been found to occur in those years in which epidemics, such as cholera, smallpox, &c., prevail in the city, and in those months in which the greatest number of patients are admitted into the whole hospital; that is, the mortality follows the rise and fall of disease elsewhere.

In reviewing the whole system of European Obstetrics, we cannot help being struck with the great difference that exists between this system and that which is employed in our own country. The difference lies almost wholly in the fact, that in America there are in general lying-in hospitals such as are found in all the chief cities abroad.

Without entering upon a consideration of *all* the advantages to be derived from the establishment of such institutions in our own country, I cannot refrain, before closing this article, from drawing attention to what has undoubtedly suggested itself to the minds of many American physicians, viz.: the great want of practical instruction in our present system of obstetrical education, which the creation of lying-in hospitals could certainly supply.

In no country, pretending to give a good medical education, is the study of obstetrics so loosely and imperfectly pursued as it is in our own. An American medical student, after three years of nominal study, presents himself for examination, and after answering a few general questions, which we might expect any school-boy, with a good memory, to be able to answer, is sent out to practise, with a guarantee in the form of a diploma that, among other qualifications, he is fitted to attend all cases of obstetrics. But what is the truth? The newly created medical man is summoned to attend a woman in her confinement, to whom he goes without, perhaps, ever having seen a woman in labor, and, for this reason, without having a very clear idea of what he is to do, even in a normal case, much less in the event of a complication arising. Arriving at his patient's house, he is brought into the presence of so much suffering that he must, indeed, be gifted with an extraordinary amount of self-reliance if he does not feel that this previous lack of practical instruction has rendered it almost culpable in him to undertake the responsibilities of the case. If the case presents any abnormal features, he is obliged, in many instances, to send for an older physician, who has undoubtedly gone through the same experiences as himself,

thus causing a delay which may prove injurious both to the mother and to the child. Whatever may be the character of the birth, it is very fortunate for him that Nature, who is always the best accoucheur, does not depend *entirely* upon the present system of obstetrical education to bring about a successful delivery, otherwise, not only he, but also many an older obstetrician would have it to reflect that they had caused a great amount of unnecessary suffering, or it may be the actual death of their patients. As it is, I have no doubt that not a few women bear with them, through life, some painful affection—the result of too much theory and too little practice.

In all other branches of our profession we receive both a theoretical and a practical education, and there is no reason why similar advantages should not be extended to us in obstetrics, in which branch we know actually less when we graduate than a German midwife, who is obliged before she commences to practise to have delivered a certain number of patients. We, on the contrary, may deem ourselves extremely fortunate if, when we enter upon the duties of our profession, we have previously, as students, attended a single woman in her confinement. It would indeed be considered highly presumptuous if a medical man were to undertake a surgical operation without at least having seen one performed, or to attend a case of fever without some previous clinical knowledge of the disease. And yet in obstetrics we are expected, without any practical experience, to meet all the emergencies which may arise in our attendance upon a lying-in woman, and if we fail it is at the expense of our professional reputation. Is this just either to the community or to the medical practitioner?

I recognize fully the amount of popular prejudice which exists against any clinical instruction in obstetrics, but if the community expects a physician to do justice to its members, it, in turn, must vouchsafe some justice to him, and allow a thorough education to be given in one of the most important and at the same time one of the most sacred branches of the profession. That an open clinic, such as has been described in the course of this article, could not be established in our country, I am fully convinced; but I am as thoroughly convinced that popular prejudice could be overcome to the extent of allowing lying-in hospitals to be established, in which the medical student could receive the practical advantages which, under the present system, is denied to him.

All objections to the establishment of such institutions, on the ground that the condition of the patients might be vitiated by allowing the students to practise in the wards, ought to be entirely removed by a perusal of the statistics of the Vienna Hospital.* With the removal of these objections, no good reason exists why lying-in hospitals should not be created, and their doors opened to the students of obstetrics; particularly since this much needed reform would serve to elevate the standard of our medical education, and also verify to the community, what a medical diploma now falsely sets forth, viz., that its recipient is fully able to assume *all* the duties of his profession.†

Reports of Medical Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. REPORTED BY F. W. DRAPER, M.D., BOSTON.

The Society met April 29th, the President, Dr. G. H. Lyman, in the chair.

Prof. J. B. S. Jackson exhibited a calculus, ovoid in shape and of the size of a large English walnut, which had been removed from the bladder of a female by dilatation of the urethra, without the use of the knife. The functions of the bladder and urethra were restored fully after five months.

Prof. Jackson also exhibited a urinary calculus whose nucleus was a shoe-lacing. It occurred in the practice of Dr. Brown, of Bangor, Me.

Dr. Fitz presented a specimen of cystic disease of the kidneys. The organs were removed from a patient who had died after convulsions consequent on meningitis and

* In a period of eleven years, from the commencement of 1850 to the end of 1860, the mortality in the wards of the 1st clinic, in which the students receive their clinical instruction, was but 0·3 per cent. higher than in those of the 2d clinic, in which none but the midwives are allowed to practise.

† The author says, in a note to the Editor:—

"As you will observe, I have gone much into detail, since, in desiring to add my mite to the endeavors which I understand are being made to establish lying-in wards in connection with our hospitals, I have desired to give a description of a very perfect system, which might serve as a starting point for the foundation of a similar system in Boston.

"No physician, and especially one who has visited Europe, can avoid the recognition of the fact that we in America are lamentably deficient in obstetrical knowledge. It is therefore time that this evil should be removed, and that the physician who cannot visit the foreign schools to perfect his education should have some of the advantages at home that his more fortunate brethren derive from a course of study abroad."

inflammation of the mastoid cells. There were no symptoms indicating renal disease.

Both kidneys were diseased. They were considerably enlarged, and, as it appeared, entirely transformed into a mass of cysts of varying size, the largest being of the size of a hazel nut. Dr. Fitz remarked that no normal renal tissue appeared to be left, and it was marvellous that the functions of the organs should have been performed at all.

Prof. Jackson remarked that of a considerable number of cases of the kind which had come under his observation, only one had presented urinary symptoms; in that exceptional case there was great thirst, with diuresis and albuminuria. The disease attacks both kidneys alike, as in the present instance. In young children the cysts are small, and the kidneys appear like the enlarged ovaries of frogs filled with ova. In some cases the kidneys become so large as to present tumors which may be felt and seen externally. He had never observed any intermediate steps of degeneration, the transformation of the organs being entire. From his own observations, he was inclined to the belief that the disease was a congenital one.

Dr. Fitz said that the microscope showed the presence of fibrous tissue about the Malpighian bodies, and the tubules contained some hyaline casts. He remarked that a distinction was to be made between this complete degeneration and the not infrequent formation of isolated cysts in the cortical substance of the kidney.

Dr. Swan said he had seen one case in which the change was partial, one third or one quarter of the kidney having undergone the cystic degeneration, while the rest of the organ consisted apparently of normal tissue.

Dr. Chenery exhibited a uterine polypus which, at the menstrual periods, had acted as a valve over the *os internum*, effectually obstructing the discharge and causing great distress until the spasmodic uterine action overcame the obstacle.

Dr. Damon read the history of a case of sudden death from fatty degeneration of the heart.

Dr. Jeffries reported a case of herpes zoster frontalis, and exhibited the plates of Hebra illustrating the disease. He described its characteristic symptoms and emphasized its intractability, persistence and intense neuralgia as sufficiently distinguishing it from erysipelas with which it is sometimes confounded, especially in the early stages. The eruption follows the distribution of the supra-orbital nerve. Coincident iritis is not infrequent. Dr. Jeffries believed section of the supra-orbital nerve to be the only effectual measure of relief.

Dr. Williams confirmed the observations of Dr. Jeffries, and had himself recently had two cases illustrating the symptoms alluded to, the continuous and intractable neuralgia being especially marked. In one case, the disease had been mistaken for erysipelas, and remedies applied accordingly before it was seen by Dr. Williams.

Dr. F. H. Brown exhibited the apparatus described in the JOURNAL of March 9th, for the diffusion of disinfecting fluids by means of the ignition of spongy platinum.

Dr. Webber related notes of an autopsy of a patient, who, during the last days of his life, had suffered from repeated attacks of hæmatemesis. The liver was found to have undergone cirrhosis. The stomach contained three pints of coagula; its mucous membrane was unbroken, but in the pyloric portion it was congested and there were numerous ecchymosed spots from which the hæmorrhage appeared to have proceeded.

Dr. Spring reported a case of angular curvature of the spine in a girl of 14, the peculiar feature being that at the point of curvature the tissues seemed to have sometime undergone erosion, leaving a deep, star-shaped cicatrix, suggesting the destruction of the transverse processes of the vertebræ at that point.

The Society adjourned.

Medical and Surgical Journal.

BOSTON: THURSDAY, JUNE 1, 1871.

REVACCINATION.

THE medical profession in England have been recently very much exercised on the subject of vaccination. The sad experience of the French in the smallpox epidemic a year ago, and the apparently rapid extension of the disease in the cities and towns of England, revive old questions and opinions which for a number of years have not been discussed on account of the comparative infrequency of the disease. For the four weeks ending April 29th, the number of deaths from the disease in London have been 215, 265, 276, 288 respectively. In a district in Islington, in a lim-

ited area of little more than one hundred yards, in two or three weeks, no fewer than 41 cases occurred; and, of these, only six were removed to the hospital. The registered mortality from smallpox also shows an increase in Liverpool, and various occasional items in our English exchanges announce the spread of the disease in various parts of the British Isles.

It is naturally to be supposed that the deaths occur in that part of the population unprotected by vaccination or inoculation. We may suppose this class to be much larger in England than with us, and violent opposition is constantly made to the attempts of Government for the protection of the people. Only a week or two ago, a man in Derby was committed to prison for having refused to pay a fine for non-compliance with the Vaccination Act. A branch of the "Anti-Vaccination League" decided upon getting up a procession on his release, and ten thousand people joined in the demonstration. A public meeting was held shortly afterwards, and lasted for several hours.

Very naturally the subject of revaccination is freely discussed in the societies and journals. In the Surgical Society of Ireland, Mr. Moore recently communicated a paper which called forth an active debate. He referred to the observations of Dr. Seaton, who insists on a more careful and more universal vaccination. He regards revaccination of adults as indispensable, as much of the earlier vaccination was imperfect, and because it was probable that, in a certain portion, susceptibility to smallpox returned after a certain age. In the present epidemic, Dr. Seaton states that the vaccinated have died in larger proportion than has been customary, and so have the unvaccinated, a fact due to the greater variolous influence. Dr. Grieve, speaking of 800 cases of smallpox at the Hampstead Hospital, from 1st December, 1870, to 18th February, 1871, says that "of the 800 cases, 591 had been vaccinated, 209 not. Of the former, many had been very imperfectly vaccinated. * * * He believed that very few unvaccinated persons reached above forty, without being attacked by smallpox. Vaccination, where it did not actually ward off smallpox, lessened its virulence, rendering it milder and more manageable. Of the 591 vaccinated, 9.8 per cent., and of the 209 unvaccinated, 45 per cent. had died. The average duration of the disease was, in the vaccinated, twenty-four, and in the unvaccinated cases, thirty-five days."

Dr. Trayer, from a very extended experience, considers revaccination the only means of ascertaining the protection retained from the primary operation; generally, the protective influence is in direct proportion to the shortness of time since its performance. As to the question of revaccination, Dr. Moore says, "I regard it not only as necessary in the present state of the world, but, in common with the authorities in most civilized countries, who insist on it in their armies and navies, I believe a nation neglecting it neglects one of the first principles of self-protection." In closing the discussion at the meeting of the Surgical Society, Dr. Kenedy said that "the variety of opinion which had been expressed convinced him that the question was still an open one. Many of the speakers caught at no argumentative line, but stated their calm and deliberate observations, and gave the results as they had occurred to them. It was from the accumulated observations and experiences of such men that a sound conclusion on the question was to be arrived at. There was one fact which had been apparently forgotten in the course of the discussion, viz., that one affirmative proof outweighs a host of negative evidence. If there was one case of smallpox occurring after vaccination, the question was an open one for revaccination. * * * One gentleman did not see any necessity for revaccination, because he had never seen any case of smallpox after vaccination; but others had seen cases repeatedly, and with serious and even fatal results. The necessary conclusion from the observations of the latter was that vaccination was only a partial protection. There was a protective influence as far as it went; but he had no doubt from what he had heard in the course of the debate that the protective influence wears out, and that it could be renewed. * * * He thought that when-

ever persons were exposed to the risk of contagion, they ought to be revaccinated; and he considered the man culpable who did not give his patient the advantage of it when he knew its efficacy." Our English non-professional exchanges at this time are filled with articles and discussions on smallpox and vaccination, as were the French papers during the last summer; and the *Times*—that last resort for the woes of all distressed Englishmen—has been "written to" by professional and non-professional persons. We have before us a series of letters addressed to the *Times* by Surgeon-Major Atchison, a well-known Indian medical officer, who makes the very sensible suggestion to care for the patients, suffering from smallpox, in tents and sheds. We are glad to know that the plans for smallpox encampments have been well received by municipal bodies, and that the practice is being carried into effect in many of the towns of England.

The discussion of such topics as the thorough ability of vaccination to protect a person against smallpox, of the duration of its influence and the necessity for revaccination, must show us that a decision in the matter can only be approximated, never reached; no experience can actually prove the question, and all theory must be based on strictly arbitrary grounds.

For instance, a few years ago, nine medical students nursed a fellow-student—who had been deserted by his family and friends—and who subsequently died of confluent smallpox. All of these had been vaccinated, and all bore satisfactory cicatrices on the arm. One contracted varioloid; the rest escaped. Vaccination, therefore, though usually a protection, is not always so; and smallpox itself does not necessarily give protection against its reappearance.

One person, at the end of a series of years, shows himself susceptible of revaccination; another not. Can it be proved that the former could have taken variola, the latter not? In a family of five persons, revaccinated by us as carefully as possible, some years ago, no result ensued. They were all apparently protected by previous vaccination, of which they showed well-marked cicatrices. One child subsequently had varioloid; the remainder escaped.

One person has a good mark on the arm, but receives a revaccination; in another the cicatrix has disappeared, but repeated attempts at revaccination fail. In the case of the medical student named above, vaccination had been attempted in his infancy and many times afterward without success, and he believed himself insusceptible to vaccinia and also to variola. He visited the smallpox hospital at Rainsford Island and contracted the disease, of which he died.

The lymph from a revaccinated arm will generally produce a vaccine vesicle on another person, but we cannot say therefore that it will surely give immunity.

We cannot, therefore, avoid these conclusions in looking at the subject of vaccination. That in a very large proportion of cases vaccination is a thorough protection against smallpox, but not an absolute one. That in a large proportion of cases the influence of vaccination apparently continues through life; in others not. That the presence of the vaccine mark is a sign that the person *has been* vaccinated, but not necessarily of his absolute protection; its absence is not a sign of his susceptibility to smallpox. The operation of revaccination is, in a very large proportion of cases, unattended by danger or inconvenience to the patient. An occasional case arises where local or general trouble is experienced, and this one of a thousand cases is seized on by the opponents of revaccination as an argument against it. So may a man die of a paltry scalp wound; in like manner an amputation of a finger may result fatally; or death may follow and seemingly be the result of an insignificant dose of medicine. This risk, it seems to us, can hardly be advanced as an argument against revaccination; but the *chance* of saving our patients from a loathsome disease should lead us to adopt it, certainly at periods when they are unduly exposed to contagion.

Dr. Bradbury (*Brit. Med. Journal*) employs hydrate of chloral in fifteen-grain doses at night for nocturnal emissions.

THE DISCUSSION ON THE FEMALE PHYSICIAN QUESTION IN THE AMERICAN MEDICAL ASSOCIATION.

(Concluded from page 355.)

EVENING SESSION.

DR. STILLE called the Association to order at 8 o'clock, and read the original resolution proposed by Dr. Atlee.

Dr. Storer, of Boston—Before a vote is taken, I desire to say a few words. And first I wish to repeat, in the most decided language, what I thought I said distinctly enough this morning—that my remarks with reference to the President of the Medical Association were without the slightest personal reference; that I entertain, and have always entertained for him, personally, the most profound respect. I supposed that this was distinctly understood by every man in the hall this morning, and by the President. I understand, however, that, in regard to the last gentleman, I was wrong; and I now repeat my statement, and if that is not sufficient—if he thinks it is not sufficient—I now publicly and from my heart apologize to him and to you. [Applause.]

Dr. Atlee stated this morning that if this resolution was passed, it was all that was desired, because it was practically an endorsement, by this Association, of female physicians. This being the case, I would say a word or two in regard to points that I did not speak of yesterday, because I thought it was entirely unnecessary, and in this matter I speak from experience. There are other gentlemen present who have had similar experience to my own. It may be, however, that they do not care to state that experience as plainly as I think the importance of the question demands. I have thoroughly tried this experiment. I felt several years since that the question was of such importance, allied, as it was, more particularly to a branch of the profession to which I had devoted myself, that it was of sufficient importance to be looked into, not merely theoretically, not merely on the ground of the respect we have for woman, but in its relations to the community; and, therefore, gentlemen, for several years I occupied the position of a surgeon to a hospital at which there were women physicians, and for two years I had some association in private practice, with one of the very best woman physicians, a graduate of the Female College, as I suppose there is at present in this country; and I will tell you distinctly, gentlemen, that by the best portion of the community, by the most refined, the most delicate ladies in the community, there is not that confidence in the woman physicians that there is in the men. In the matter of practice, and I state this because it is claimed that there are certain branches of the practice filled by them, and for which they are peculiarly fitted—that on the one hand the relations of the physician to his patient, and the relations of the patient to the physician entirely debar the idea of sex. In the case of confinement, what lady hesitates to send for a male accoucheur? In the case of a difficult confinement, provided she is attended by a midwife or nurse, what lady hesitates to have a male physician called in, if the anxieties of the case demand it? It is so, gentlemen, with regard to all other cases which are claimed to be the peculiar province of women. But, Mr. President, there is another point underlying all this. We will grant that some exceptional women are as interested in our science as ourselves. That some of them have those peculiar qualities, that especial temperament, that gives them not merely a taste for anatomy and surgery, but courage to face the greatest dangers and anxiety in surgery; that there are some women who are able to go out in inclement weather and brave the storm; we may grant that women, some of them, may have had peculiar means, or favorable opportunities, which allow them to get this same education that men have; we may grant that, and grant it freely that in some matters, intellectually, women are as completely mistresses of their subject as we are masters of ours; but beyond this there is a point that is fundamental to the whole matter, and out of very many physicians that have discussed the matter with me—I may say out of many of my patients who have discussed the matter—I have to see the first one that does not agree with me in it; and that is this inherent quality in their sex, that uncertain equilibrium, that varying from month to month, according to the time of the month, in each woman, that unfits her from taking these responsibilities of judgment which, as I said this morning, are to control the question often of life and death. Women may be and are undoubtedly the best nurses—they may carry out to the letter the direction of the physician; but every physician who is familiar with women, and every woman, almost without an exception, who expresses an honest opinion in this matter, will say that women from month to month and week to week vary—up and down; that they are not the same one time that they are another;

that their diagnosis varies, and comparing the average of women with the average of men to-day, they are inferior in the matter of judgment.

Now, I know there are many sides to this question. Dr. Thomas read to you a list of leading men in the profession who allow their names to be used as consulting physicians, or directors, or trustees of various educational establishments, and it is claimed that that use of their names is a guaranty that the system is endorsed. We all of us know that very many men are compelled to allow their names to be used, in the same way that they endorse Seltzer water and surgical instruments; and I have no doubt, from the statement made upon both sides of the question by one prominent gentleman in this assembly, that it is possible that his heart may direct him one way and his judgment another. I said this morning that I would not imply that any man of standing in the profession would be governed in his profession by pecuniary considerations, but it is evident that gentlemen who are practising in a certain department, providing their organizations allow them to endorse female physicians, are thereby sure of an increase in their consultation fees.

There is one other argument, Mr. President, which has been used and which has been printed and circulated throughout the country, and it is a strange one in the portion of the country from which I came, and that is this. It has been stated here to-day by one of the most prominent champions of this movement; and that is that no male physician, no matter what his standing, can enter the chamber of a sick woman, no matter in what position, who is unmarried, without exciting in her mind delicate feelings. I hate to refer to this, but it is upon the record, and it is one of those base arguments which are used for the purpose of destroying an influence throughout the whole land.

Dr. Atlee—The gentleman says that I stated on the floor this morning that the American Association ought to endorse the female practitioner. I said no such thing. What I said was this, that by passing that resolution it would place me on the same footing precisely with my professional brethren throughout the United States, giving me the privilege of consulting with whom I pleased who was a physician, male or female, that lived up to the code of ethics, not that I endorsed either male or female physicians, but to give me my rights as a physician.

There is another matter, and that is the matter of pecuniary motives. That was attended to this morning, and there has been allusions to it this afternoon. I deny the insinuation that has been made, and I hurl it back in the gentleman's teeth. I have no pecuniary interest in the matter; I occupy my position honestly, and I hope to retain that honest position till death. I conceive that females have rights, and these rights under the American code of ethics I will maintain as long as I can under the institutions to which I belong. If pecuniary considerations governed me, why should I not refuse consultation with them when other gentlemen, under institutions that have the same laws, hold such consultations? I think that will disperse anything of that kind, and I hope the gentleman who has made that insinuation will apologize before the Association for it. Gentlemen who know me in Philadelphia and in Pennsylvania will not dare accuse me of such a thing. * * * * * *

Dr. Gibbons, Sr., of San Francisco—We have a right sometimes to judge of a proposition by the arguments which are brought forward for its support, and if we are to judge of this proposition by the arguments brought forward by my friend from Boston, I think it would prove conclusively the weakness of his side of the question. One of his arguments was, that female physicians fluctuate in their judgment, in consequence of natural changes in their systems; that once a month their judgment was influenced by these natural changes. Now, I appeal to your observation, Mr. President, and that of any other medical man here, whether it is not a fact that any large majority of male practitioners fluctuate in their judgment not once a month with the moon, but every day, with the movement of the sun—whether one-half of the male practitioners of medicine are not to a greater or less extent under the influence of alcohol at some period in the twenty-four hours? [Applause and hisses.] Gentlemen, we have an Academy of Sciences in which we place all specimens of strange animals, and if some one will catch me one of those hissing animals, I will be glad to present it to that Academy. [Hisses.] I was not aware that I was stating anything offensive, because I was stating a positive fact in regard to the habits of men. I do not pretend to say that men in the practice of medicine get drunk, by any means. [A voice: "Temperance lecture."] [Hisses.] But what I do say is this, and I insist on the privilege, as I believe I have been misinterpreted, of

correcting myself—what I mean to say is that the great majority of the community, say three out of four, do make use of wine, or some kind of intoxicating drink, under the influence of which, without being drunk, their judgment is more or less affected, and I lay that down as a physiological fact in our society, and that is all I mean when I refer to the changes that take place in the judgment of men. [Hisses.]

The President—Gentlemen, allow me to appeal to your good sense and courtesy against any such manifestation as this.

A delegate—I ask the Chair, then, to call any speaker to order who shall violate the rules of decorum by such a reflection.

Dr. Gibbons [proceeding]—Another position on the question taken by the gentleman from Boston is, that no physician can enter the chamber of a female without exciting delicate feelings. Now, I say no absurdity of that kind ought to be brought before this body on a question like this. It is not a question as to whether females should be educated as physicians or not; the resolution pending has nothing to do at all with that, and one who may be opposed firmly, permanently and fixedly, to the education of females as physicians, may still with propriety vote for this resolution. * * * In conclusion, inasmuch as my first remarks seemed to give some offence, although I did not intend anything of the kind myself, I beg to apologize, and assure members of the profession that no man has a higher regard for every member of this body than myself. I assure the members that my remarks must have been misunderstood in regard to intoxicating drinks; and therefore I apologize for those remarks and recall them. [Applause.]

Dr. Stillé, the President (Dr. Gibbons having been called to the Chair)—I am not going to make a speech, because I do not wish to detain you; but things have been said here in regard to the State which I in part represent that are not altogether correct. Some things have been said, evidently through inadvertency, and others through ignorance, both of which I wish to correct. A statement that has been made through inadvertence is, that the Society—by which is meant, I presume, the Medical Society—the Societies of Philadelphia have enacted a law forbidding their members to consult with female practitioners of medicine. Now, that is not a correct statement. The County Medical Society has passed resolutions of that sort. But there is another Society in Philadelphia, which has existed for more than a hundred years, and which is known to many of the members of this body as the College of Physicians of Philadelphia, the oldest Society of the kind in the country, and which includes all that is eminent, all that is renowned, all that is useful in the medical profession, and excludes all that have not some decided professional claim to membership. Now, that body decided, when this question was brought up, differently from the County Medical Society. It turned it out of doors and left everybody to do as seemed good in his conscience. So it should be understood that in Philadelphia it is only a particular Society—the County Medical Society—and not the College of Physicians of Philadelphia that has adopted such an illiberal course. I have the honor to be one of the members of that College of Physicians, and one of the censors of that Society, an office which I have held, if I remember rightly (after having the honor of being president for eight or nine years), certainly for seven years. I am familiar, therefore, with all that has been done upon this question in the County Medical Society, because it was likely to come before the Board of Revision to which I refer; and not a single member of that Society has dared to test this question before the Board of Censors. They have passed in the Society a resolution condemning the consulting with female practitioners, and there they have stopped. If I may speak for myself, I will say they have known that I have done so, and others whose names, if I were to mention them, would be familiar to the ears of all of you, have consulted with female practitioners. Some of these gentlemen, when they found they were acting in opposition to the rules of the County Society, withdrew from its fellowship, and others did not hesitate to consult with female practitioners, and defied the Society to enforce its rule. I repeat that it is only the Philadelphia Medical Society which has adopted such a rule; and it is a question upon which the Board of Censors has never been called upon to pronounce.

Dr. Atlee—I stand corrected in regard to the Societies of Philadelphia. But I would ask of our worthy President whether the College of Physicians is represented in the State Medical Society.

Dr. Stillé—No, sir.

Dr. Wetherley—The more I hear of this matter the more fully convinced I am that this Medical Association should pursue the same policy as heretofore, namely: not to interfere with local quarrels. [Applause.] Up to this time such matters

have been referred back to the State or the County organization. If these gentlemen in Philadelphia, or in Pennsylvania, cannot manage their own quarrels, they should not bring them here. We have heard the whole subject discussed, and I think the general opinion is that we do not violate the code of ethics in consulting with female practitioners; but we should leave them to settle their own local quarrels; and I therefore move that this resolution be indefinitely postponed.

The motion to indefinitely postpone was carried by a very decided vote.

On the 25th of April, Mr. Hutchinson read a paper before the Medico-Chirurgical Society, *On the Communicability of Syphilis by Vaccination*, in which he drew the conclusions that a child in apparent health, with latent syphilis, may yield pure vaccine lymph or may yield syphilitic poison only, or both, and that it is the admixture of blood with lymph which communicates the disease.

In the very interesting discussion which followed, Mr. Lee, Mr. DeMeric, Mr. Brundenell Carter and Mr. Drysdale expressed their conviction that Mr. Hutchinson's paper would break through the credulity which, under official guidance and blue-book instruction, most British practitioners entertained with regard to the possibility that vaccinia could be a vehicle of syphilis.

Messrs. Editors,—Permit me to remark regarding the last note of Dr. Winsor, that I copied the statements of Prof. Bache from an earlier edition of the U. S. Dispensatory (the only one within my reach at the time), and that no such qualifying remarks as quoted by Dr. W. appear in that edition. Since it was issued, the manufacture of zinc-washed iron pipes for water conduction has become a great interest in Philadelphia, and, unfortunately, great pecuniary interests sometimes modify opinions in directions apparently remote and among parties apparently disinterested. But what is the value of mere *opinion* upon a medical, chemical, or toxicological point which is only settled by direct experiment and observation? The objections urged by the writer against the use of zinc-washed pipes for water conduction, during the past two or three years, are perfectly valid, being based upon *facts*; facts derived through experimental investigation.

It has been proved by a series of long-continued and carefully conducted experiments that the superficial coating of zinc which is left upon the interior of iron pipes by immersing them in a bath of molten zinc, is readily and speedily removed by the action of water, and that so long as the coating remains, the water in contact contains considerable quantities of the carbonate, oxide, and sometimes the chloride of the metal. These results correspond with those of *all* reliable chemists who have made similar investigations, both in this country and in Europe.

That these salts are injurious to the animal economy when taken in waters used for household purposes, is proved by the alarming and even fatal effects which have followed the use of such in families. The recent sad case in Melrose is unequivocal in its nature. Instances of zinc poisoning have occurred in the families of *several physicians* of high standing within a few months, and they are by no means rare in other families, if the investigations and statements of competent medical gentlemen are of any value. I presume Dr. W. has no other interests to subserve in this discussion than those relating to correct sanitary knowledge. I certainly have no other. My only object is to awaken the attention of physicians and heads of families to a new source of danger in methods of conducting water, and I think no higher service can be rendered the community than this.

Jas. R. Nichols, M.D.

The Essex North District Medical Society held their annual meeting at the office of Dr. J. P. Whittemore, in Haverhill. The following officers were elected for the ensuing year:—

President, Dr. Seneca Sargent, Lawrence. *Secretary and Treasurer*, Dr. Martin Root, Byfield. *Librarian*, Dr. J. P. Whittemore, Haverhill. *Corresponding Secretary*, Dr. Morris Spofford, Groveland. *Commissioner of Trials*, Dr. J. Spofford, Groveland. *Censors*, Drs. D. Dana, E. Cross, O. H. Johnson, Wm. H. Kimball, R. C. Huse. *Counsellors*, Drs. J. R. Nichols, Wm. D. Lamb, H. C. Perkins, J. Crowell, O. Warren.

Dr. J. Spofford gave the annual address, which was principally devoted to biographical notices of the earlier members of the Society, and was listened to with close attention. He alluded to the fact that although he had reached the advanced age of eighty-

three he was not the senior member of the Society, Dr. Richard Spofford, of Newburyport, being several years older.

Dr. Perkins was called upon to give some account of his researches on the germs of disease, and gave an interesting account of his study in that direction, and was invited to address the Society on that subject at the next quarterly meeting. He distributed capsules among the members in which to forward him morbid specimens, and his paper on that subject is awaited with much interest.

At the request of the State Board of Health, Drs. B. B. Breed, J. G. Pinkham, and J. O. Webster, of Lynn, have undertaken to investigate the influence of the use of sewing machines, run by foot-power, upon the health of female operatives. The aid of members of the profession is solicited, and blank forms intended for use in summing up the results of observations and inquiries have been issued. The committee desire to make a thorough investigation of this subject, and, to this end, extend a general invitation to the profession to communicate to them such statistics, facts and opinions as may be at their command. In order to reach those of our subscribers to whom the official circular may not have been sent, we copy the questions proposed by the committee :—

1. How many cases have you investigated?

2. Have you known cases of any of the following diseases which seemed to be produced by running sewing machines by foot-power? If so, how many? *A.* Lameness of limbs or back. *B.* Dyspepsia. *C.* Lung Disease. *D.* Nervous Disease, or Depression. *E.* Uterine Diseases:—*a.* Menorrhagia; *b.* Dysmenorrhœa; *c.* Amenorrhœa; *d.* Leucorrhœa; *e.* Displacements; *f.* Inflammations. *F.* Miscarriage. *G.* Other Diseases.

3. Have you known persons afflicted with any of the above diseases who seemed to be worse when running sewing machines by foot-power than at other times? If so, what diseases, and how many cases?

4. Have you known cases in which sexual excitement was produced by running sewing machines by foot-power? If so, how many, and what was the character of the persons?

5. Is there in your opinion less illness among the women in work-rooms since the introduction of steam-power?

6. Is there less illness among those who operate sewing machines at their own homes than among those who work in shops?

The blanks are to be returned to either of the committee on or before October 1, 1871.

Pathology of Angina Pectoris.—Drs. A. Eulenberg and P. Guttman, of Berlin, after having fully set forth (*Archiv für Psychiatrie*, ii. p. 15, 1869, and *Archives Générales de Médecine*, September, 1870) the history of the subject, and discussed all the common facts and the current theories, sum up in these terms:—"Angina pectoris is a neurosis both of motion and of sensibility. The symptoms to which it gives rise may be provoked by causes of a different nature, even extraneous to the heart. All the cardiac nerves are probably more or less affected in this malady, and the variability of the phenomena observed in different cases depends, without doubt, on the more or less active part that the nerves which unite together in the cardiac plexus take in the production of these phenomena. It is probable that the great sympathetic plays the most important *rôle*, for it is this which forms the major part of the cardiac plexus."—*Phil. Medical Times.*

The Introduction of Iodine by means of Electricity.—M. Brückner has investigated the resistance that the uninjured skin offers to the introduction of iodine when applied by the electro-therapeutic method, the subjects of his experiments being himself and a patient. The two electrodes were applied opposite to each other on the flexor and exterior sides of the fore-arm, and a very strong current transmitted through the arm, after tincture of iodine had either been painted on the skin, or a compress wetted with it had been applied beneath one or other of the electrodes. Iodine and iodide of potassium entered into the cutis at the cathode, but did not in all probability penetrate much deeper, and a slight inflammation occurred, which, however, was subsequently shown to be due to the action, not of the iodine, but of the electric current alone. No iodine penetrated the skin at the anode, although he has not satisfactorily ascertained whether iodine penetrates into the deeper tissues or not, when applied by means of electricity. He recommends that mode of applying it, on account of the slightness of the inflammatory reaction by which it is accompanied.—*Deutsche Klinik*, 1870, No. 40.

Medical Miscellany.

MASSACHUSETTS MEDICAL SOCIETY.

PROGRAMME FOR TUESDAY, JUNE 6TH.

Ten o'clock, A.M.—Operations, Surgical Visit, and Exhibition of Patients, at the Massachusetts General Hospital and the City Hospital.

Twelve o'clock, M.—Meeting at the Lowell Institute, Washington Street (rear of Marlboro' Hotel), where papers by the following gentlemen will be read:—1. Dr. Edward Wigglesworth, Jr., Boston, Baldness; 2. Dr. Henry Tuck, Boston, Torsion of Bloodvessels; 3. Dr. R. H. Fitz, Boston, Tuberculosis; 4. Dr. Wm. L. Richardson, Boston, External Manipulation in Obstetric Practice; 5. Dr. H. I. Bowditch, Boston, Venesection. Adjournment at 2 o'clock.

Four o'clock, P.M.—The Society will re-assemble at the Lowell Institute for the further reading of papers and for their discussion. Adjournment at 6 o'clock.

During the afternoon the Warren Museum at the Mass. Med. College, at North Grove Street, the Warren Museum of Natural History, 92 Chestnut Street, the Cabinet of the Med. Improvement Society, Perkins Building, 36 Temple Place, the Museum of the Boston Society of Natural History, Berkeley Street, Dr. Wigglesworth's Museum of Dermatology, 24 Charles Street, and the Children's Hospital, 1429 Washington Street, corner of Rutland, will be open to the Society.

The Annual Meeting of the Councillors will be held at the Rooms of the Society, Perkins Building, No. 36 Temple Place, Boston, at 7.30 precisely.

PROGRAMME FOR WEDNESDAY, JUNE 7TH.

The Annual Meeting of the Society will be held at the Lowell Institute, Boston, at 10 o'clock, A.M., SAMUEL A. FISK, M.D., President.

Order of Proceedings.—1, Reading of the Records; 2, Treasurer's Report; 3, Announcement of names of deceased Members; 4, Announcement of names of new Members; 5, Medical Papers and Communications: i., Dr. JOHN DOLE, Amherst, Practical Aspects of Medical Science; ii., Dr. W. C. B. FIFIELD, Harrison Square, Helps in Practice.

At 1 o'clock, precisely, the Annual Discourse, by HENRY J. BIGELOW, M.D., of Boston.

Anniversary Dinner.—The Annual Dinner will be served at Music Hall, Winter Street. N. B.—Members will pass in to the dinner by a private entrance from the Lowell Institute, being called in the order of seniority. LUTHER PARKS, M.D., Anniversary Chairman.

TURPENTINE AND PHOSPHORUS.—MM. Höhler and Schimpf have reported in the *Berliner Med. Wochenschrift* that they have repeated the experiments of Personne with the following results: Commercial oil of turpentine is a good antidote to poisoning by phosphorus. There is no fatty degeneration of the tissues, nor is there any free phosphorus found in the system of the animals experimented on. Phosphorus and turpentine oil form in the stomach a compound resembling spermaceti, which is readily excreted.—*Med. and Surg. Journal.*

SUBSTITUTE FOR QUININE.—It is stated, in the *Lancet*, that M. Pavia, of Italy, has produced an alkaloid from the leaves and roots of boxwood, which he calls Bussine. In the experience of several Italian physicians this substance has been found to possess virtues nearly equal to quinine, in the treatment of miasmatic fevers. In several cases gastric uneasiness, pyrosis, thirst, nausea, giddiness, and tinnitus aurium, were attributed to the use of this remedy.—*Med. Record.*

DR. J. W. HOOD (*Quarterly Journal of Science*) writes that Dr. Boyd has successfully treated two cases of *snake-bite* with carbolic acid—taken internally, and applied as a caustic to the wound. The effect was magical.—*Oregon Med. & Surg. Rep.*

DIED,—At Aiken, S. C., 23d inst., Francke Williams, M.D., son of the late Rev. Samuel P. Williams, of Newburyport, Mass.

PAMPHLETS RECEIVED.—Rules for the Internal Government of St. Luke's Hospital and Church Home, Detroit, Mich. Pp. 20.—Proceedings of the American Pharmaceutical Association at the Eighteenth Annual Meeting, held in Baltimore, Md., September, 1870. Also the Constitution and Roll of Members. Philadelphia. (From H. W. Lincoln, Boston.) Pp. 352.—Sulphate of Quinia in Pneumonia. Annual Address read before the Sacramento Society for Medical Improvement, March 21, 1871. By F. W. Hatch, M.D., President. Pp. 16.—Mechanical Surgery. (The Manufacture of Artificial Limbs.) By E. D. Hudson, M.D., New York. Pp. 47.

Deaths in sixteen Cities and Towns of Massachusetts for the week ending May 27, 1871.

Cities and Towns.	*No. of Deaths.*
Boston	96
Charlestown	12
Worcester	23
Lowell	23
Chelsea	5
Cambridge	11
Salem	7
Lawrence	3
Springfield	6
Lynn	7
Fitchburg	2
Taunton	8
Newburyport	4
Somerville	7
Fall River	7
Haverhill	3
	224

Prevalent Diseases.	
Consumption	46
Pneumonia	28

Seven deaths from smallpox are reported; six in Lowell and one in Boston.

GEORGE DERBY, M.D.,
Secretary of State Board of Health.

DEATHS IN BOSTON for the week ending Saturday, May 27th, 96. Males, 45; females, 51. Accident, 5—apoplexy, 1—inflammation of the bowels, 1—bronchitis, 5—congestion of the brain, 2—cyanosis, 2—cancer, 1—consumption, 22—croup, 2—convulsions, 4—dropsy of the brain, 2—erysipelas, 1—scarlet fever, 1—typhoid fever, 3—gastric fever, 1—disease of the heart, 4—hæmorrhage, 1—inflammation of upper jaw, 1—infantile, 2—congestion of the lungs, 2—inflammation of the lungs, 11—marasmus, 4—old age, 2—pyæmia, 3—premature birth, 2—peritonitis, 1—scrofula, 1—smallpox, 1—disease of the spine, 1—tumor, 1—whooping cough, 2—unknown, 4.

Under 5 years of age, 32—between 5 and 20 years, 14—between 20 and 40 years, 26—between 40 and 60 years, 13—above 60 years, 11. Born in the United States, 64—Ireland, 22—other places, 10.